

REMARKS

This Amendment is responsive to the Office Action mailed on September 27, 2005. Claims 1-15 have been cancelled, and new claims 16-27 have been added.

Applicant's undersigned attorney would like to thank the Examiner and his supervisor for the courteous and productive interview held on December 12, 2005. Applicant agrees with the substance of the interview as set forth on the Interview Summary form PTOL-413 dated December 12, 2005. In particular, agreement was reached that changing the limitations of proposed claims 16 and 24 to recite shot-peening the inside of an at least partially bent pipe would overcome the obviousness rejections set forth in the September 27, 2005 Office Action.

Subsequent to the interview, a telephone discussion was held with the Examiner on December 14, 2005 to discuss somewhat broader terminology for defining the invention without using the term "pipe" in the independent claims. In particular, since the invention may also be used for shot-peening the inner wall of an internal bent channel provided in a workpiece, such as a cylinder head or a turbine blade, it was agreed that reciting a "channel having at least one bend in a longitudinal direction thereof" and specifying that the flexible plastic tube is advanceable through the bent portion of the channel for introducing the stream of shot-peening particles into the bent portion of the channel would also define over the prior art of record. The present Amendment introduces the new claims as agreed during the December 14, 2005 telephone discussion.

Prior claims 1-9, 11-13 and 15 stand rejected as being obvious over Avery et al. U.S. 4,230,426 in view of Russell U.S. 4,773,113. Claims 10 and 14 stand rejected as being obvious over Avery et al. in view of Russell in further view of Irwin U.S. 5,933,903. Applicant respectfully traverses these rejections in view of the new claims and the comments which follow.

The present invention, as set forth in the new claims, provides a shot-peening apparatus for an inner wall of ***a channel having at least one bend in a longitudinal direction thereof***. A flexible plastic tube is advanceable through the channel for introducing a stream of particles to shot-peen the inner wall of the channel. An elongated

helically wound wire encloses the tube for reducing friction between the tube and the inner wall when the tube is advanced through the channel.

Applicant agrees with the Examiner that the closest prior art of record is Avery et al. However, it is clear that the Avery et al. reference only relates to shot-peening *straight pipes*. In order to achieve the intended purpose of the Avery et al. invention, only straight pipes can be processed, since a specific angular relationship between the shot and the conduit must be maintained. See, e.g., column 2, lines 49-53; column 3 lines 17-19; and column 3 lines 31-39.

As stated in Avery et al., at column 3 line 67 to column 4 line 4:

“When a system is employed utilizing ‘pipe bends’, it is contemplated that such ‘pipe bends’ may be formed from shot-peened *straight pipes*, with the angular relationship heretofore described being generally maintained with respect to the curved longitudinal flow direction of such a ‘bend’.” [emphasis added]

Thus, it is clear that any “bends” in the Avery et al. structure are formed from successive sections of straight pipe, *after the shot-peening process is completed*. The Avery et al. method intentionally avoids performing the shot-peening process on curved channels, because the desired precise angles would not be maintained. Thus, Avery et al. only shot-peens *straight pipes*, and teaches away from Applicant's claimed invention, which relates to shot-peening an inner wall of a *channel having at least one bend in a longitudinal direction thereof*.

In order to provide the shot-peening on straight pipes, Avery et al. discloses only the use of a rigid lance 7. This is contrary to the flexible plastic tube used and claimed by Applicant. The combination of Avery et al. with Russell and Irwin to overcome this shortcoming of Avery et al. is believed to be improper. First, as noted above, Avery et al. teaches away from using a flexible tube, because they only want to work on straight conduits and maintain a particular acute impacting angle during the shot-peening process. Second, Russell and Irwin both relate to high pressure cleaners for cleaning drain pipes

and waste lines. The present invention, however, relates to shot-peening for improving the strength of an inner wall surface of a channel, and more particularly for improving the strength of the inner wall surface of a channel formed in a metallic body. Since shot-peening is not used for cleaning a channel or the like, it is respectfully submitted that one skilled in the art of shot-peening would not look to the high pressure cleaner art to solve the problem of shot-peening the inner wall of a bent channel. Accordingly, it would not have been obvious to combine Avery et al. with Russell and/or Irwin to arrive at the present invention.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims and the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

In view of the above, the Examiner is respectfully requested to formally allow each of the pending claims. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,



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